

were all in perfect plumage. The young in the downy state are a dark slate color.

The Pigeons are always timid, and ever on the alert when being watched, and the observer must approach them cautiously to prevent a commotion. They inherit the instincts of their race in a number of ways. On the approach of a storm the old birds will arrange themselves side by side on the perch, draw the head and neck down into the feathers and sit motionless for a time, then gradually resume an upright position, spread the tail, stretch each wing in turn, and then, as at a given signal, they spring from the perch and bring up against the wire netting with their feet as though anxious to fly before the disturbing elements. Mr. Whittaker has noticed this same trait while observing Pigeons in the woods.

It was with a peculiar sense of pleasure and satisfaction that I witnessed and heard all the facts about this flock, inasmuch as but few of us expect to again have such opportunities with this Pigeon in the wild state. It is to be hoped that, if Mr. Whittaker continues to successfully increase these birds, he will dispose of a pair to some of our zoölogical gardens, for what would be a more valuable and interesting addition than an aviary of this rapidly diminishing species.

NOTES ON THE BIRDS OF BERMUDA.

BY D. WEBSTER PRENTISS.

BULLETIN 25 of the United States National Museum, on the Natural History of Bermuda, contains some remarks on Bermudian Birds. Since its publication in 1884 two species have been added to the Bermudian Fauna, namely the Mockingbird and the European Goldfinch.

1. *Mimus polyglottos*.—Six pairs of the American Mockingbird were liberated at St. George's in 1893, by Capt. Myers, the German Consul. I have not seen any of them in the neighborhood of Walsingham, but from

the climate, and habits of the bird, there seems to be no reason why in a few years, it should not be as abundant as its near relative, the Catbird, now the most abundant bird on the island, except the English Sparrow.

2. *Carduelis carduelis*. THE EUROPEAN GOLDFINCH.—A number of these birds escaped from a vessel at St. George's in 1893, and have multiplied rapidly, until now they are quite common about Walsingham and Poynter's Vale. Have seen a flock of twenty-five or thirty. They make a very attractive addition to the Bermudian Fauna.

It may be of interest to note the six common resident birds of Bermuda, which include about the only birds seen in the winter.

1. *Vireo noveboracensis*. WHITE-EYED VIREO.—Called "Chick of the Village." Very common and very familiar, coming about the house on the rose-bushes and arbors, as also do the Catbirds. A 'Chick' flew into my room through the open door a few days since, and I caught it at the window. It seemed quite fearless and pecked at my finger, as I smoothed it before giving it its liberty. They are in full song during the winter.

2. *Cardinalis cardinalis*.—Very common and fearless. They come into the chicken yard when the chickens are fed and contest with the Sparrows for a portion of the meal.

It is a beautiful sight to see them hopping about the green lawn, together with Bluebirds and Catbirds, and would be still more attractive but for the presence of the ubiquitous English Sparrows. The Redbirds began calling about the middle of February, and now, March 1, are heard in all directions. The note is a little different from that of birds about Washington, D.C., being less robust. There are two distinct whistles—the *Wee-do, wee-do, wee-do*, and the *Phee-a, phee-a*—the latter quite plaintive.

3. *Sialia sialis*.—The Bluebird is also very abundant, but I am told not so much so as formerly. No reason is known for the decrease in numbers unless it is that their nests are broken up and the young destroyed by the English Sparrows. It is possible also that the tree rats (*Mus tectorum*), which build their nests in trees may destroy the eggs and young of the Bluebirds. The notes of the Bluebird also differ from those in the States. They have a general similitude but are not so low, are plaintive and more varied.

I am told by Mr. U. S. Peniston that the Bluebird gives notice of the approach of a hawk by a peculiar long drawn whistle, and that chickens hearing it scurry to shelter. The Bluebirds seem rather smaller than in the States, and the colors deeper.

4. *Galeoscoptes carolinensis*.—The Catbird is everywhere;—along the roads, in the gardens, coming fearlessly to the porches; in the myrtle thickets—in short, ubiquitous. It is not so much of a favorite as the others mentioned, perhaps on account of its sober colors, but

more because of its depredations on small fruits, especially the Loquat plum. Its note, the 'mew,' is also less vigorous than that of the American bird—is more quiet and subdued. They are not yet in song (March 1).

5. *Columbigallina passerina*.—The Ground Dove is also very abundant, being constantly seen feeding along the roads. It is more timid than the birds previously mentioned, but when feeding in the old fields, one can walk quite close to them without their taking alarm.

6. *Passer domesticus*.—The English Sparrow is as aggressive, offensive and despised here as in the States. They were introduced some years ago and in a climate without winter, propagate prodigiously. An attempt was made to check their increase by a bounty for the birds and their eggs of six pence a dozen, but it cost the government so much, £800 in one year, that it was abandoned, while its destruction apparently made no difference in the number. They are most cordially hated by the Bermudians for several reasons:—they foul the eaves and verandahs of the houses, eat up the chicken feed, destroy the fruit—especially grapes and the Loquat, and last but not least, antagonize the native birds. I have been told of instances of their taking possession of the hole occupied by Bluebirds and destroying the rightful occupants.

Fortunately the Sparrows do not rest much on the roofs of houses, or they would pollute the water supply. The Bermudians depend entirely upon rain water for their supply. The houses are tiled with thin slabs of stone and kept white-washed to secure pure water. Birds frequenting the roofs would be very objectionable.

I have seen no domestic pigeons here though I believe there are a few in Hamilton.

7. As another nuisance ornithologically may be mentioned the Crow—introduced some twenty years since. They became very numerous and did so much damage to the crops, especially the Indian corn, and by killing young ducks and chickens, that a bounty of half a crown (60 cts.) was put on their heads. This has almost exterminated them—a small flock of five in the neighborhood of Walsingham being all that remains.

8. The Kingfisher (*Ceryle alcyon*) presents a familiar and handsome appearance, especially around the shores of Harrington Sound. The bird however is not a favorite. The squid is the best bait for fishing and are very scarce. I heard a fisherman charge the scarcity to the Kingfishers—they being especially fond of squid. So also in the Aquarium of beautiful fish—angel fish, turbot, parrot fish, etc., at Mrs. Allen's at Flatt's Village. Many young fish of these species were added, but were said to be eaten by the Kingfishers. Perhaps the latter, however, were not wholly to blame, for one morning a Blue Heron was found perched reflectively over the pond.

9. Lastly permit me to mention the picturesque Tropic Bird (*Phaëthon flavirostris*), a prominent and interesting feature of the landscape, from the first of March until October, with its single long tail feather, dashing

and wheeling over the waters. They were formerly greatly more abundant, but from the wanton destruction both of the birds and eggs, their numbers are much reduced. Now, however, the destruction of both birds and eggs is forbidden by law, and it is to be hoped they will again become numerous. This year the advance guard arrived February 28,—rather earlier than usual. On this date I saw them for the first time at the 'Ferry' between the islands of Hamilton and St. George; forty or fifty were circling around and examining the rocky cliffs as though selecting their breeding places. The Tropic Bird is popularly called the 'Bo'sin Bird.'

RECENT LITERATURE.

Stone on the Molting of Birds.¹—In this paper the author has given the results of considerable personal work and experience. The paper consists of two parts, the first being "a general account of the methods of plumage change," and the second, "brief accounts of the molts and seasonal plumages of most of the smaller land birds of eastern North America, from the Cuckoos through the Passeres in the order of the American Ornithologists' Union Check List." The trouble attending the bringing together of even an incomplete series, and consequent difficulty in determining the exact changes occurring in many plumages, are duly set forth, and our author is careful to state that "no doubt alterations will have to be made in my accounts of the molt in several species, in the light of future investigations." Under 'Change of Color by Abrasion,' and 'Direct Change of Color in Feathers,' the results of investigations made with the assistance of Dr. A. P. Brown are given, with illustrations. The changes of plumage in the Snow Bunting, Dunlin and Sanderling are pointed out and commented on, this work having been done without knowledge of Mr. Chapman's recent efforts in the same line. The views of Mr. Chapman are fully indorsed and those of Herr Gätke correspondingly disproved. The only instance known to our author "of an actual change of color in the plumage, except by fading, is in the case of certain delicate pink tints on the breasts of gulls." Certain opinions of Drs. Stejneger and Sharpe regarding the changes of color in *Motacilla lugens* and *Zanthopygia narcissina* and

¹The Molting of Birds with Special Reference to the Plumages of the Smaller Land Birds of Eastern North America. By Witmer Stone. Proc. Acad. Nat. Sci. Phila., 1896, pp. 108-167, pll. iv and v.